



UNIVERSITY OF TETOVA

## INTERNATIONAL CONGRESS ON NATURAL, HEALTH SCIENCES AND TECHNOLOGY

# BOOK OF ABSTRACTS



6<sup>th</sup> International Balkan  
Conference in Sport Sciences

5<sup>th</sup> International Scientific  
Conference of Applied Sciences



4<sup>th</sup> International Scientific Conference  
of the Faculty of Medical Sciences

3<sup>rd</sup> International Conference of  
Natural Sciences and Mathematics



1<sup>st</sup> International Conference of  
Food Technology and Nutrition

15-17 May, Tetova



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and Technology**

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# DEVELOPMENT AND VALIDATION OF A LIQUID CHROMATOGRAPHY COUPLED TANDEM MASS SPECTROMETRY (LC-MS/MS) METHOD TO DETERMINATION TYLOSIN AND LINCOMYCIN ANTIBIOTIC RESIDUES IN MILK

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## Abstract

A rapid and sensitive liquid chromatography tandem mass spectrometry (LC-MS/MS) method has been developed and validated for the simultaneous identification, confirmation and quantitation of tylosin and lincomycin residues in milk. The method was validated in accordance with Commission Decision 2002/657/EC.

McIlvaine buffer was used to extract residues from milk, and further SPE cleanup was performed using an Oasis HLB cartridges. Chromatographic separation was achieved using a C18 column (50 x



2.1 mm, 1.7  $\mu\text{m}$ ) with mobile phase A: 0.1% formic acid in water and mobile phase B: 0.1% formic acid in acetonitrile.

The linear regression analysis showed good correlation with  $R^2$  from 0.9911 to 0.9947. The recoveries of target compounds were 84.5% for lincomycin and 92.70% for tylosin. The decision limits ( $CC\alpha$ ) for lincomycin was 15.30  $\mu\text{g/l}$  and for tylosin 13.50  $\mu\text{g/l}$ . Detection capability ( $CC\beta$ ) was 17.60  $\mu\text{g/l}$  and 16.85  $\mu\text{g/l}$ , respectively.

From the validation study results can conclude that the method is suitable to be applied for routine analysis of the residues of lincomycin and tylosin in milk.

*Keywords:* lincomycin, tylosin, milk, validation, LC-MS/MS method.